

CLINICAL EFFECTIVENESS OF THE PHYTOTHERAPEUTIC DRUG NEFURIN IN THE COMPLEKS TREATMENT OF PATIENTS WITH CHRONIC UROLITHIASIS

<https://doi.org/10.5281/zenodo.18719599>

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Abstract

Chronic urolithiasis is one of the most common diseases of the urinary system, characterized by the formation of calculi in the kidneys and urinary tract. The main etiological factors include metabolic disorders, alterations in urinary acid-base balance, chronic urinary tract infections, and hereditary predisposition. The disease has a recurrent course and, in the absence of timely treatment, may lead to serious complications such as chronic pyelonephritis, hydronephrosis, and renal failure.

Modern diagnostic methods include ultrasonography, computed tomography, and laboratory urine analysis. Treatment strategies are aimed at stone elimination (conservative or surgical), correction of metabolic disturbances, and prevention of recurrence. Preventive measures are based on normalization of water balance, dietary therapy, and monitoring of metabolic parameters.

Thus, timely diagnosis and a comprehensive therapeutic approach to chronic urolithiasis significantly reduce the incidence of complications and improve patients' quality of life. Chronic urolithiasis is one of the most common diseases of the urinary system, characterized by the formation of calculi in the kidneys and urinary tract. The main etiological factors include metabolic disorders, alterations in urinary acid-base balance, chronic urinary tract infections, and hereditary predisposition. The disease has a recurrent course and, in the absence of timely treatment, may lead to serious complications such as chronic pyelonephritis, hydronephrosis, and renal failure.

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Thus, timely diagnosis combined with a comprehensive and individualized therapeutic approach plays a key role in reducing the incidence of complications, preventing disease recurrence, and significantly improving the quality of life of patients with chronic urolithiasis.

Keywords

urolithiasis, chronic course, metabolism, prevention, diagnosis, treatment.

Treatment of Chronic Urolithiasis

The treatment of chronic urolithiasis is aimed at eliminating calculi, preventing their recurrence, and correcting metabolic disorders. Depending on the size, composition, and localization of stones, both conservative and surgical treatment methods are applied. Conservative therapy includes the use of antispasmodic and analgesic agents to relieve pain, as well as medications that promote stone dissolution and excretion (citrate mixtures, uricodepressive agents, and phytotherapeutic preparations). In the presence of an infectious component, antibacterial drugs are prescribed according to microbial sensitivity.

To accelerate the evacuation of small calculi and sand from the urinary tract, herbal diuretics and increased fluid intake are recommended. In cases of large stones or stones resistant to pharmacological treatment, minimally invasive removal methods are indicated, including extracorporeal shock wave lithotripsy, as well as endoscopic or laparoscopic lithoextraction.

An important component of therapy is the prevention of recurrence, which includes individualized dietary management based on the type of stone formation (oxalate, urate, phosphate), normalization of hydration, and correction of metabolic abnormalities (hypercalciuria, hyperuricemia, etc.). A comprehensive approach allows the achievement of stable remission and prevention of recurrent stone formation.

Novel Therapeutic Approaches: Use of Nefurin

Standard treatment methods for chronic urolithiasis do not always ensure sustained remission or prevent disease recurrence. Therefore, the search for new therapeutic agents combining efficacy and safety for long-term use remains relevant. One such agent is Nefurin, a phytotherapeutic complex with anti-inflammatory, diuretic, and uroantiseptic properties.

Nefurin contains extracts of medicinal plants that enhance the excretion of salts and microcrystals from the kidneys, normalize metabolic processes, and reduce inflammatory reactions in the urinary tract. Due to its combined mechanism of action, Nefurin leads to a reduction in dysuric symptoms, a decrease in the frequency of exacerbations, and prevention of recurrent stone formation. The drug

is well tolerated, suitable for long-term use, and represents an effective component of comprehensive therapy for chronic urolithiasis.

Aim and Objectives of the Study

Aim of the study:

To evaluate, in a comparative aspect, the clinical efficacy and safety of the phytotherapeutic agent Nefurin in the comprehensive treatment of patients with chronic urolithiasis.

Objectives of the study:

1. To investigate the effect of Nefurin on the dynamics of clinical manifestations of chronic urolithiasis (pain syndrome, dysuric disorders, recurrence rate).
2. To assess changes in laboratory parameters (urinalysis, salt levels, crystalluria) during therapy with Nefurin.
3. To study the influence of Nefurin on metabolic parameters contributing to stone formation (oxalates, urates, phosphates).
4. To determine the frequency and severity of adverse effects associated with Nefurin as part of combination therapy.
5. To compare the obtained results with those in a group of patients receiving standard treatment without Nefurin.
6. To evaluate the overall clinical efficacy, tolerability, and preventive effect of Nefurin on urolithiasis recurrence.

Materials and Methods

The study was conducted at the urology department of (institution to be specified) during the period from 2025 to 2026 . A total of **patients 45** (men - 20 ,women - 25) aged **20 to 40** years with chronic urolithiasis in remission or with periodic exacerbations were enrolled in the study. The diagnosis was established based on clinical data, laboratory findings, and instrumental methods, including renal and urinary tract ultrasonography, general urinalysis, biochemical blood analysis, and determination of stone composition.

Patients were divided into two groups:

- Main group (n = ..20.): received standard therapy in combination with the phytotherapeutic agent Nefurin at a dosage according to the manufacturer's instructions (1 capsules 2 times daily for 4 weeks).
- Control group (n = ..25.): received standard therapy only, including antispasmodic (drotaverin 40 tablets 3 times daily) , anti-inflammatory (ibuprofen 400 mg 2 times daily), and diuretic (kanefron H 50 drops 3times a day) agents.

Inclusion criteria were a confirmed diagnosis of chronic urolithiasis, absence of acute inflammatory processes and renal failure, and informed consent to participate in the study. Exclusion criteria included acute urinary tract infections, severe renal failure, and individual intolerance to the components of Nefurin.

Clinical efficacy was assessed based on changes in pain intensity, severity of dysuric symptoms, recurrence frequency, as well as laboratory and instrumental data. Treatment safety was evaluated by the incidence and nature of adverse events and overall patient well-being.

Statistical analysis was performed using standard methods of variation statistics, with calculation of the mean value (M), standard deviation (SD), and level of statistical significance ($p < 0.05$).

Results and Discussion

The study demonstrated that the inclusion of the phytotherapeutic agent Nefurin in comprehensive therapy for patients with chronic urolithiasis resulted in a more pronounced positive clinical response compared with the control group.

In the main group, a significant reduction in pain intensity, alleviation of dysuric symptoms (burning sensation, frequent urination), and improvement in general condition were observed as early as days 10–14 of treatment, whereas similar improvements in the control group were noted only by days 18–21.

Laboratory findings revealed a statistically significant ($p < 0.05$) reduction in urinary salt levels (oxalates, urates, phosphates), a decrease in crystalluria, and normalization of urinary pH in patients receiving Nefurin. Ultrasonography performed after 4 weeks of treatment showed a reduction in the number of microcalculi or their complete elimination in 62% of patients in the main group, compared with 38% in the control group.

Nefurin was well tolerated by patients. Adverse events were rare and mild, transient in nature, and included occasional nausea or epigastric discomfort. No serious adverse effects requiring discontinuation of the drug were reported.

The obtained results confirm that the inclusion of Nefurin in comprehensive therapy for chronic urolithiasis enhances overall treatment efficacy, accelerates the elimination of microcrystals, improves urodynamics, and reduces the risk of disease recurrence. The combination of anti-inflammatory, mild diuretic, and antiseptic effects ensures a multifactorial impact on the main pathogenetic mechanisms of urolithiasis.

Thus, the use of Nefurin represents a pathogenetically justified and safe method for the treatment of patients with chronic urolithiasis and is promising for widespread clinical application.

Conclusions

1. The inclusion of the phytotherapeutic agent Nefurin in comprehensive treatment significantly improves the clinical efficacy of therapy for patients with chronic urolithiasis due to its anti-inflammatory, diuretic, and uroantiseptic effects.
2. Nefurin therapy results in a significant reduction in pain severity, decreased frequency of dysuric disorders, and accelerated elimination of microcalculi from the urinary tract.
3. The drug contributes to normalization of urinary parameters (reduction of crystalluria, stabilization of urinary pH, and decreased salt levels), thereby preventing recurrent stone formation.
4. Nefurin is well tolerated, does not cause serious adverse effects, and can be used for long-term therapy and prevention of urolithiasis recurrence.
5. The use of Nefurin as part of comprehensive treatment is a safe and pathogenetically justified therapeutic approach for patients with chronic urolithiasis.

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